REMARKS

Claims 1 to 10, 12 and 14 to 24 as set forth in Appendix I of this paper are now pending in this case. Claim 11 has been canceled and Claims 1 to 10, 12 and 14 to 24 have been amended as indicated.

More particularly, in addition to editorial changes in the wording of the claims, applicants have reintroduced the definition of R^5 as an N-bonded heterocycle in Claim 1[1)], and have further specified the N-bonded heterocycles in Claims 1 and 14 based on applicants' disclosure on page 48, indicated line 36, to page 49, indicated line 8, of the application. The requisite definition of the N-bonded heterocycles is incorporated into Claims 2 to 10, 12 and 15 to 24 by reference to Claim 1 and Claim 14, respectively. Also, for clarity sake, where the heterocycles were referenced as "N-linked" applicants have substituted the expression "N-bonded". No new matter has been added.

The Examiner rejected Claims 6 to 9 and 18 to 21 under 35 U.S.C. §112, ¶2, for referring to *"preparing compounds ..."*. Applicants have revised those claims to relate to a process for preparing --the compound of formula I--, and withdrawal of the Examiner's respective rejection is therefore respectfully solicited.

The Examiner rejected Claim 14 under 35 U.S.C. §112, ¶2, for reciting *"... and their ... salts"*. Accordingly, applicants have revised the respective section to read --or an ... salt thereof--. The same change was made in Claim 1. Withdrawal of the Examiner's respective rejection is therefore respectfully solicited.

The Examiner rejected Claim 1 under 35 U.S.C. §112, ¶2, for reciting in the definition of R^6 the phrase *"two radicals, which are linked to the same carbon, together form"*. The Examiner argues on the one hand that it is unclear as to which two radicals applicants' definition refers. Accordingly, applicants have inserted --R^6-- after *"two radicals"*[2)]. On the other hand, the Examiner takes the position that it is unclear what rings are being formed. It is respectfully submitted in this regard that it is believed to be immediately apparent that a group wherein one carbon atom carries two radicals R^6 which together represent -for example- a chain $-(CH_2)_4-$ forms a cyclopentane

1) The cancellation of the requisite denotation in a previous amendment was due to an inadvertent error on the part of applicants.

2) Claims 5 and 14 where changed in a corresponding manner.

ring. Correspondingly, where the two radicals R^6 which are bonded to the same carbon atom represent a chain $-(CH_2)_p-$ a cycloalkyl ring is formed, and so on. The test of definiteness is whether a person skilled in the art would understand the bounds of the claim when reading it in the light of the specification[3]. Where the definition of R^6 is concerned, it is believed that a person of ordinary skill in the chemical art will understand what rings are formed even without consulting with the supporting specification. Moreover, as explained in *Ex parte Wu* (*10 USPQ2d 2031 at 2033 (BPAI 1989)*)

> *In rejecting a claim under the second paragraph of 35 U.S.C. 112, it is incumbent on the examiner to establish that one of ordinary skill in the pertinent art, when reading the claims in light of the supporting specification, would not have been able to ascertain with reasonable degree of precision and particularity the particular area set out and circumscribed by the claims.*

The Examiner has not given reasons which establish why a person of ordinary skill would not be able to ascertain the area defined in applicants' claim with a reasonable degree of precision. It is therefore respectfully requested that the rejection of Claim 1 under Section 112, 2, be withdrawn. Favorable action is solicited.

The Examiner rejected Claims 1 to 4, 7, 10 to 12, 16 and 22 to 24 under the judicially created doctrine of obviousness-type double patenting as being unpatentable in light of Claims 1 to 5 and 13 to 17, of ***Otten et al.*** **(US 6,479,436)** when taken in view of the disclosure of ***Barton et al.*** **(US 5,426,091)**. In this context the Examiner points out that applicants' compounds (I) differ from the compounds generically defined by ***Otten et al.*** solely in the nature of applicants' radical R^5, and contends that a person of ordinary skill in the art would be motivated by the teaching of ***Barton et al.*** to replace the corresponding hydroxyl group of ***Otten et al.***'s compounds by acetyl, ether or sulfonate groups because ***Barton et al.*** disclose that hydroxyl, acetyl, ether and sulfonate groups are equivalent in the context of herbicidal compounds which are structurally related to the compounds addressed in ***Otten et al.***'s claims.

It has to be noted, however, that ***Barton et al.***'s disclosure that hydroxyl, acetyl, ether and sulfonate groups are equivalent cannot reasonably motivate a person of ordinary skill in the art to effect

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3) Cf. Morton Int. Inc. v. Cardinal Chem. Co., 5 F.3d 1464, 28 USPQ2d 1190 (CAFC 1993); Orthokinetics Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1 USPQ2d 1081 (CAFC 1986).

the structural change which is necessary to convert the hydroxyl substituted compound into the corresponding acetyl, ether and sulfonate. Following the Examiner's argument, a person of ordinary skill in the art would reasonably assume that the hydroxyl compound and the corresponding acetyl, ether or sulfonate compound have essentially the same properties. Since the properties of the compounds are essentially the same, it would appear to be uneconomical to go through the extra efforts and the extra expenditures which are necessary to convert the hydroxyl compounds into the corresponding acetyl, ether or sulfonate compound. The teaching of ***Barton et al.*** is therefore not deemed to motivate a person of ordinary skill in the art to do what applicants have done. It is well settled that obviousness within the meaning of Section 103(a) requires that the prior art contain a teaching which would motivate a person of ordinary skill to do what the applicant has done[4] and, according to long-standing holdings of the Courts, an analysis employed in an obviousness-type double patenting rejection parallels the guidelines for analysis of a 35 U.S.C. §103 obviousness determination[5].

Moreover, as argued by the Examiner, a person of ordinary skill in the art would expect that the hydroxyl compound and the corresponding acetyl, ether or sulfonate compound exhibit essentially the same properties. Applicants have, however, found that the respective expectation is not met when specific cyclohexenonequinolinoyl compounds are selected from the generic realm of ***Otten et al.***'s claims and are converted into the compounds represented by applicants' formula (I). Applicants have found that the structural change of a specific group of ***Otten et al.***'s compounds provides for compounds which exhibit a significantly improved herbicidal activity. The respective improvement is shown in the data contained in the attached test report[6]. The data show in particular that the structural change which is necessary to arrive at applicants' compounds (I) in all instances improves the herbicidal effectivity of the compounds at low applica-

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4) Cf. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438, 1442 (CAFC 1991). See also In re Baird, 16 F.3d 380, 382, 29 USPQ2d 1550, 1552 (CAFC 1994); In re Jones, 958 F.2d 347, 350, 21 USPQ2d 1941, 1943 (CAFC 1992).

5) Cf. In re Braithwaite, 379 F.2d 594, 154 USPQ 29 (CCPA 1967); In re Longi, 759 F.2d 887, 225 USPQ 645 (CAFC 1985); In re Braat, 837 F.2d 589, 19 USPQ2d 1289 (CAFC 1991).

6) Applicants are prepared to present the data and information contained in the attached test report in form of a Declaration if the Examiner deems such a Declaration to be necessary.

tion rates. In most of the tests, only the activity of applicants' compounds is such that the herbicidal effect which is observed at the lower application rate is equal to or even better than the herbicidal effect which results when the comparative compound is applied in twice the amount.

In light of the foregoing and the attached it is therefore respectfully requested that the rejection of Claims 1 to 4, 7, 10 to 12, 16 and 22 to 24 under the judicially created doctrine of obviousness-type double patenting based on the claims of ***Otten et al.*** and the disclosure of ***Barton et al.*** be withdrawn. Favorable action is solicited.

The Examiner rejected Claims 1 to 5, 10, 12, 14 to 17 and 22 to 24 under 35 U.S.C. §112, ¶1, for referring to *"derivatives"*. It is respectfully requested that the respective rejection be withdrawn in light of applicants' amendment. Favorable action is solicited.

The Examiner rejected Claims 14 to 16 under 35 U.S.C. §112, ¶1, taking the position that applicants' disclosure is insufficient to enable a person of ordinary skill in the art to make and/or use applicants' compounds (I) to the extent that they carry an *"N-bonded heterocycle"* in the position of R^5. Applicants' respectfully disagree. As addressed on pages 65 and 66, the respective compounds are obtained by reacting a compound of applicants' formula (I) in which R^5 is, for example, halogen, with an N-heterocyclic compound which has an HN-moiety. The underlying reaction, a nucleophilic substitution, is one of the basic reactions in organic chemistry. The HN-compounds, which are abbreviated in applicants' disclosure as "H(N-bonded heterocycle)" are well known and widely employed in organic chemistry. Additionally, applicants have illustrated the preparation of such compounds in Examples 2.36, 2.38 to 2.40, 2.42, 2.43, 2.46, 3.2, 3.3 and 3.5. Given the guidance which is provided in the application it is therefore not seen why a person of ordinary skill in the art would require further information in order to make the compounds of formula (I) commensurate in scope with the claims.

The manner in which applicants' compounds are to be used in addressed in the application on pages 84 et seq., and the Examiner will note that applicants' respective description and guidance is consonant with, for example, the explanations given by ***Otten et al.***[7] and

7) Cf. col. 54, indicated line 62, to col. 58, indicated line 15, of ***US 6,479,436***.

by ***Barton et al.***[8]. The art applied by the Examiner in the obviousness-type double patenting rejection therefore clearly corroborates that the manner in which a herbicidal compound is applied in well within the general technical background knowledge of a person having ordinary skill in the pertinent technology[9]. The only information which is necessary for a person of ordinary skill in the art to use applicants' compounds which goes beyond the background knowledge is information pertaining to the application rate of the compounds. The requisite information is provided by applicants on page 88, indicated lines 8 to 11, of the application. Additionally, applicants also disclose examples for testing of the compounds in greenhouse experiments[10]. The respective greenhouse tests and an application of the compounds *"outdoors"* are essentially routine endeavor as evidenced by the corresponding information which is found in the teaching of ***Otten et al.***[11] and in the teaching of ***Barton et al.***[12]. It is therefore respectfully requested that the respective rejection be withdrawn. Favorable action is solicited.

For essentially the same reasons it is respectfully requested that the Examiner's rejection of Claim 24 under 35 U.S.C. §112, ¶1, be withdrawn. In this context, the Examiner takes the position that applicants' disclosure is insufficient to enable a person of ordinary skill in the art to use the compounds (I) against all unwanted vegetation. As addressed in the foregoing, the endeavor involved in greenhouse testing is experimentation routinely conducted in the art. It requires, therefore, no more than routine experiment to employ applicants' compounds against unwanted plants. To the Extent that the Examiner' rejection is based on doubt that applicants' compounds exhibit the requisite herbicidal effect, the rejection is not deemed to be proper because the Examiner has not given reasons why a person of ordinary skill in the art would doubt the truth and accurateness of the statements made in the application. As explained by the CCPA in *In re Marzocchi*[13]:

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8) Cf. col. 30, indicated line 35, to col. 34, indicated line 43, of ***US 5,426,091***.

9) An application need not teach, and preferably omits, that which is well known in the art. Cf. Hybritech, Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 231 USPQ 81 (CAFC 1986); Lindemann Maschinenfabrik GMBH v. American Hoist and Derrick Co., 730 F.2d 1452, 1463, 221 USPQ 481, 489 (CAFC 1984).

10) Cf. pages 89 and 99 of the application.

11) Cf. col. 58, indicated line 16, to col. 59, indicated line 3, of ***US 6,479,436***.

12) Cf. col. 38, indicated line 55, to col. 43, indicated line 5, of ***US 5,426,091***.

13) 439 F.2d 220, 169 USPQ 637 (CCPA 1971)

> *... it is incumbent on the Patent Office, whenever a rejection on this basis is made, to explain why it doubts the truth or accuracy of any statement in a supporting disclosure and to back up assertions of its own with acceptable evidence or reasoning which is inconsistent with the contested statement. Otherwise there would be no need for the applicant to go to the trouble and expense of supporting his presumptively accurate disclosure.*

As evidenced by the sections of ***Otten et al.*** and ***Barton et al.*** referenced in the foregoing, a person of ordinary skill in the art generally considers a limited number of data pertaining to the herbicidal effectivity of novel compounds as a sufficient basis to reasonably conclude that such compounds exhibit herbicidal effects against unwanted plants[14]. It is respectfully requested that the respective rejection be withdrawn. Favorable action is solicited.

REQUEST FOR EXTENSION OF TIME:

It is respectfully requested that a *three* month extension of time be granted in this case. A check for the *$980.00* fee is attached.

Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees, to Deposit Account No. 11.0345. Please credit any excess fees to such deposit account.

Respectfully submitted,
KEIL & WEINKAUF

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Encl.: THE LISTING OF CLAIMS (Appendix I)
Test Report

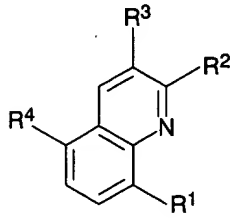
HBK/BAS

14) Cf. in particular Claim 15, col. 66, of ***US 6,479,436***, and col. 58, indicated line 16, to col. 59, indicated line 3, of ***US 6,479,436***.

APPENDIX I:

THE LISTING OF CLAIMS:

1. (*currently amended*) A cyclohexenonequinolinoyl ~~derivative~~ compound of ~~the~~ formula I



I

where:

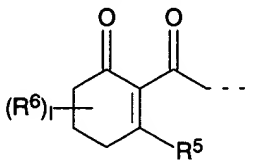
R^1 is hydrogen, nitro, halogen, cyano, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxyiminomethyl, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_1-C_6-haloalkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-haloalkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylsulfonyl, aminosulfonyl, N-(C_1-C_6-alkyl)aminosulfonyl, N,N-di-(C_1-C_6-alkyl)aminosulfonyl, N-(C_1-C_6-alkylsulfonyl)amino, N-(C_1-C_6-haloalkylsulfonyl)amino, N-(C_1-C_6-alkyl)-N-(C_1-C_6-alkylsulfonyl)amino, N-(C_1-C_6-alkyl)-N-(C_1-C_6-haloalkylsulfonyl)amino,

phenoxy, or phenylthio, it being possible for the ~~four~~ two last-mentioned radicals to be partially or fully halogenated and/or to carry one ~~to three~~ or two of the following substituents :

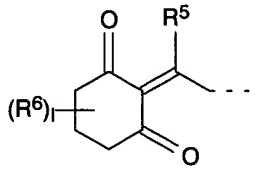
nitro, cyano, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy or C_1-C_4-haloalkoxy;

R^2, R^3 are hydrogen, C_1-C_6-alkyl, C_1-C_6-haloalkyl or halogen;

R^4 is a compound IIa or lIb



IIa



IIb

where

R^5 is halogen, OR^7, SR^7, SOR^8, SO_2R^8, OSO_2R^8, POR^8R^9, OPR^8R^9, $OPOR^8R^9$, $OPSR^8R^9$, $NR^{10}R^{11}$, $ONR^{11}R^{12}$ or N-bonded heterocycle;

wherein the N-bonded heterocycle is selected from the group consisting of: tetrahydropyrrol-1-yl, 2,3-dihydro-1H-pyrrol-1-yl, 2,5-dihydro-1H-pyrrol-1-yl, pyrrol-1-yl, tetrahy-

dropyrazol-1-yl, tetrahydroisoxazol-2-yl, tetrahydrothiazo-2-yl, tetrahydroimidazol-1-yl, tetrahydrooxazol-3-yl, tetrahydrothiazol-3-yl, pyrazol-1-yl, imidazol-1-yl, 1,2,4-triazol-1-yl, tetrazol-1-yl, piperidin-1-yl, 4-oxo-1,4-dihydro-1-pyridyl, hexahydropyrimidin-1-yl, hexahydropyrazin-1-yl, tetrahydro-1,4-oxazin-4-yl, tetrahydro-1,2oxazin-2-yl, succinimide, maleimide and glutarimide,

and wherein the N-bonded heterocycle is optionally partially or fully halogenated and/or is unsubstituted or substituted by one to three of the following radicals: citro, cyano, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy or C_1-C_4-haloalkoxy;

R^6 is nitro, halogen, cyano, C_1-C_6-alkyl, C_1-C_6-haloalkyl, di-(C_1-C_6-alkoxy)methyl, di-(C_1-C_6-alkylthio)methyl, (C_1-C_6-alkoxy)(C_1-C_6-alkylthio)methyl, hydroxyl, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkoxycarbonyloxy, C_1-C_6-alkylthio, C_1-C_6-haloalkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-haloalkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylsulfonyl, C_1-C_6-alkylcarbonyl, C_1-C_6-haloalkylcarbonyl, C_1-C_6-alkoxycarbonyl or C_1-C_6-haloalkoxycarbonyl;

or

two radicals R^6, which are linked to the same carbon, together ~~form an~~ represent a chain -O-$(CH_2)_m$-O-, -O-$(CH_2)_m$-S-, -S-$(CH_2)_m$-S-, -O-$(CH_2)_n$- or -S-$(CH_2)_n$ ~~chain~~ which chain is unsubstituted or substituted by one to three radicals from the following group:

halogen, cyano, C_1-C_4-alkyl, C_1-C_4-haloalkyl or C_1-C_4-alkoxycarbonyl;

or

two radicals R^6, which are linked to the same carbon, together ~~form~~ represent a chain -$(CH_2)_p$- ~~chain~~ which ~~possibly~~ is optionally interrupted by oxygen or sulfur and/or is unsubstituted or substituted by one to four radicals from the following group:

halogen, cyano, C_1-C_4-alkyl, C_1-C_4-haloalkyl or C_1-C_4-alkoxycarbonyl;

or

two radicals R^6, which are linked to the same carbon, together ~~form~~ represent a methylidene group which is unsubstituted

or substituted by one or two radicals from the following group:

halogen, hydroxyl, formyl, cyano, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_1-C_6-haloalkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-haloalkylsulfinyl, C_1-C_6-alkylsulfonyl or C_1-C_6-haloalkylsulfonyl;

or

two radicals $\underline{R^6}$, which are linked to the same carbon, together with this carbon ~~form~~ represent a carbonyl group;

or

two radicals $\underline{R^5}$, which are linked to different carbons, together ~~form~~ represent a $-(CH_2)_n-$ chain which is unsubstituted or substituted by one to three radicals from the following group:

halogen, C_1-C_6-alkyl, C_1-C_6-alkoxy, hydroxyl or C_1-C_6-alkoxycarbonyl;

R^7 is C_1-C_6,-alkyl, C_3-C_6-alkenyl, C_3-C_6-haloalkenyl, C_3-C_6-alkynyl, C_3-C_6-haloalkynyl, C_3-C_6-cyloalkyl, C_1-C_{20}-alkylcarbonyl, C_2-C_6-alkenylcarbonyl, C_2-C_6-alkynylcarbonyl, C_3-C_6-cyloalkylcarbonyl, C_1-C_6-alkoxycarbonyl, C_3-C_6-alkenyloxycarbonyl, C_3-C_6-alkynyloxycarbonyl, (C_1-C_{20}-alkylthio)carbonyl, C_1-C_6-alkylaminocarbonyl, C_3-C_6-alkenylaminocarbonyl, C_3-C_6-alkynylaminocarbonyl, N,N-di-(C_1-C_6-alkyl)aminocarbonyl, N-(C_3-C_6-alkenyl)-N-(C_1-C_6-alkyl)aminocarbonyl, N-(C_3-C_6-alkynyl)-N-(C_1-C_6-alkyl)aminocarbonyl, N-(C_1-C_6-alkoxy)-N-(C_1-C_6-alkyl)aminocarbonyl, N-(C_3-C_6-alkenyl)-N-(C_1-C_6-alkoxy)aminocarbonyl, N-(C_3-C_6-alkynyl)-N-(C_1-C_6-alkoxy)aminocarbonyl, di-(C_1-C_6-alkyl)-aminothiocarbonyl, C_1-C_6-alkylcarbonyl-C_1-C_6-alkyl, C_1-C_6-alkoxyimino-C_1-C_6-alkyl, N-(C_1-C_6-alkylamino)imino-C_1-C_6-alkyl or N,N-di-(C_1-C_6-alkylamino)imino-C_1-C_6-alkyl, it being possible for the above-mentioned alkyl, cycloalkyl and alkoxy radicals to be partially or fully halogenated and/or to carry one to three of the following groups:

cyano, C_1-C_4-alkoxy, C_1-C_4-alkylthio, di-(C_1-C_4-alkyl)amino, C_1-C_4-alkylcarbonyl, C_1-C_4-alkoxycarbonyl, C_1-C_4-alkoxy-C_1-C_4-alkoxycarbonyl, di-(C_1-C_4-alkyl)amino-C_1-C_4-alkoxycarbonyl, hydroxycarbonyl, C_1-C_4-alkylaminocarbonyl, di-(C_1-C_4-alkyl)aminocarbonyl, aminocarbonyl, C_1-C_4-alkylcarbonyloxy or C_3-C_6-cycloalkyl;

phenyl, phenyl-C_1-C_6-alkyl, phenylcarbonyl-C_1-C_6-alkyl, phenylcarbonyl, phenoxycarbonyl, phenoxythiocarbonyl, phenoxy-C_1-C_6-alkylcarbonyl, phenylaminocarbonyl, N-(C_1-C_6-alkyl)-N-(phenyl)aminocarbonyl, or phenyl-C_2-C_6-alkenylcarbonyl, it being possible for the phenyl radical of the 10 last-mentioned substituents to be partially or fully halogenated and/or to carry one to three of the following radicals:

nitro, cyano, C_1-C_4-alkyl, C_1-C_4-halogenalkyl, C_1-C_4-alkoxy or C_1-C_4-haloalkoxy;

R^8, R^9 are C_1-C_6-alkyl, C_3-C_6-alkenyl, C_3-C_6-haloalkenyl, C_3-C_6-alkynyl, C_3-C_6-haloalkynyl, C_3-C_6-cycloalkyl, hydroxyl, C_1-C_6-alkoxy, amino, C_1-C_6-alkylamino, C_1-C_6-haloalkylamino, di-(C_1-C_6-alkyl)amino or di-(C_1-C_6-haloalkyl)amino, it being possible for the abovementioned alkyl, cycloalkyl and alkoxy radicals to be partially or fully halogenated and/or to carry one to three of the following groups:

cyano, C_1-C_4-alkoxy, C_1-C_4-alkylthio, di-(C_1-C_4-alkyl)amino, C_1-C_4-alkylcarbonyl, C_1-C_4-alkoxycarbonyl, C_1-C_4-alkoxy-C_1-C_4-alkoxycarbonyl, di-(C_1-C_4-alkyl)amino-C_1-C_4-alkoxycarbonyl, hydroxycarbonyl, C_1-C_4-alkylaminocarbonyl, di-(C_1-C_4-alkyl)aminocarbonyl, aminocarbonyl, C_1-C_4-alkylcarbonyloxy or C_3-C_6-cycloalkyl;

phenyl, phenyl-C_1-C_6-alkyl, <u>or</u> phenoxy, it being possible for the phenyl radical of the last-mentioned substituents to be partially or fully halogenated and/or to carry one to three of the following radicals:

nitro, cyano, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy or C_1-C_4-haloalkoxy;

R^{10} is C_1-C_6-alkyl, C_3-C_6-alkenyl, C_3-C_6-haloalkenyl, C_3-C_6-alkynyl, C_3-C_6-haloalkynyl, C_3-C_6-cycloalkyl, hydroxyl, C_1-C_6-alkoxy, C_3-C_6-alkenyloxy, C_3-C_6-alkynyloxy, amino, C_1-C_6-alkylamino, di-(C_1-C_6-alkyl)amino or C_1-C_6-alkylcarbonylamino, ~~where~~ <u>it being possible for</u> the abovementioned alkyl, cycloalkyl and alkoxy radicals ~~may~~ <u>to</u> be partially or fully halogenated and/or ~~may~~ <u>to</u> carry one to three radicals from the following group:

cyano, C_1-C_4-alkoxy, C_1-C_4-alkylthio, di-(C_1-C_4-alkyl)amino, C_1-C_4-alkylcarbonyl, C_1-C_4-alkoxycarbonyl, C_1-C_4-alkoxy-C_1-C_4-alkoxycarbonyl, di-(C_1-C_4-alkyl)amino-C_1-C_4-alkoxycarbonyl, hydroxycarbonyl, C_1-C_4-alkylaminocarbonyl, di-(C_1-C_4-al-

kyl)aminocarbonyl, aminocarbonyl, C_1-C_4-alkylcarbonyloxy or C_3-C_6-cycloalkyl;

phenyl, or phenyl-C_1-C_6-alkyl, ~~where~~ it being possible for the phenyl radical of the two last-mentioned substituents ~~may~~ to be partially or fully halogenated and/or ~~may~~ to carry one to three of the following radicals:

nitro, cyano, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy or C_1-C_4-haloalkoxy;

R^{11}, R^{12} are C_1-C_6-alkyl, C_3-C_6-alkenyl, C_3-C_6-alkynyl or C_1-C_6-alkylcarbonyl;

l is 0 to 6;

m is 2 to 4;

n is 1 to 5;

p is 2 to 5;

~~and their~~ or an agriculturally useful ~~salts~~ salt thereof.

2. (*currently amended*) A cyclohexenonequinolinoyl ~~derivative~~ compound of ~~the~~ formula I as claimed in claim 1 where

R^1 is halogen, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6-alkylthio, or phenylthio, it being possible for the last-mentioned radical to be partially or fully halogenated and/or to carry one ~~to three~~ or two of the following substituents ~~mentioned below~~:

nitro, cyano, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy or C_1-C_4-haloalkoxy;

R^5 is halogen, OR^7, SR^7, SOR^8, SO_2R^8, OSO_2R^8, OPR^8R^9, $OPOR^8R^9$ $OPSR^8R^9$, $NR^{10}R^{11}$ or N-bonded heterocyclyl.

3. (*currently amended*) A cyclohexenonequinolinoyl ~~derivative~~ compound of ~~the~~ formula I as claimed in claim 1, where

R^5 is halogen, OR^7, $NR^{10}R^{11}$ or N-bonded heterocyclyl.

4. (*currently amended*) A cyclohexenonequinolinoyl ~~derivative~~ compound of ~~the~~ formula I as claimed in claim 1, where

R^7 is C_1-C_6-alkyl, C_1-C_{20}-alkylcarbonyl,

C_1-C_6-alkoxycarbonyl, (C_1-C_{20}-alkylthio)carbonyl, N,N-di-(C_1-C_6-alkyl)aminocarbonyl, phenyl, phenylcarbonyl or phenoxy-C_1-C_6-alkylcarbonyl, it being possible for the phenyl radical of the three last-mentioned substituents to be par-

tially or fully halogenated and/or to carry one to three of the following radicals:

nitro, cyano, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy or C_1-C_4-haloalkoxy;

R^{10} is C_1-C_6-alkyl or C_1-C_6-alkoxy;

R^{11} is C_1-C_6-alkyl.

5. (*currently amended*) A cyclohexenonequinolinoyl ~~derivative~~ compound of ~~the~~ formula I as claimed in claim 1, where

R^6 is nitro, halogen, cyano, C_1-C_6-alkyl, C_1-C_6-haloalkyl, di-(C_1-C_6-alkoxy)methyl, di-(C_1-C_6-alkylthio)methyl, (C_1-C_6-alkoxy)(C_1-C_6-alkylthio)methyl, hydroxyl, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkoxycarbonyloxy, C_1-C_6-alkylthio, C_1-C_6-haloalkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-haloalkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylsulfonyl, C_1-C_6-alkylcarbonyl, C_1-C_6-haloalkylcarbonyl, C_1-C_6-alkoxycarbonyl or C_1-C_6-haloalkoxycarbonyl;

or

two radicals R^6, which are linked to the same carbon, together ~~form an~~ represent a chain -O-$(CH_2)_m$-O-, -O-$(CH_2)_m$-S-, -S-$(CH_2)_m$-S-, -O-$(CH_2)_n$- or -S-$(CH_2)_n$ ~~chain~~ which chain is unsubstituted or substituted by one to three radicals from the following group:

halogen, cyano, C_1-C_4-alkyl, C_1-C_4-haloalkyl or C_1-C_4-alkoxycarbonyl;

or

two radicals R^6, which are linked to the same carbon, together ~~form~~ represent a chain -$(CH_2)_p$- ~~chain~~ which ~~possibly~~ is optionally interrupted by oxygen or sulfur and/or is unsubstituted or substituted by one to four radicals from the following group:

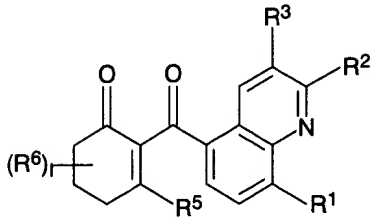
halogen, cyano, C_1-C_4-alkyl, C_1-C_4-haloalkyl or C_1-C_4-alkoxycarbonyl;

or

two radicals R^6, which are linked to the same carbon, together with this carbon ~~form~~ represent a carbonyl group.

6. (*currently amended*) A process for preparing ~~compounds of~~ the compound of formula I as claimed in claim 1 where R^5 = halogen, which

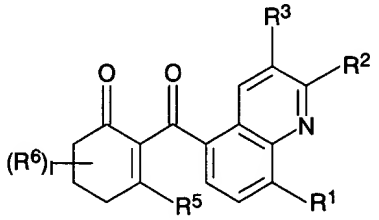
comprises reacting a cyclohexanedione ~~derivative~~ of ~~the~~ formula III,



III

where the variables R^1 to R^3, and l are each as defined in claim 1, with a halogenating agent.

7. (*currently amended*) A process for preparing ~~compounds of~~ the <u>compound of</u> formula I as claimed in claim 1 where R^5 = OR^7, OSO_2R^8, OPR^8R^9, $OPOR^8R^9$ or $OPSR^8R^9$, which comprises reacting a cyclohexanedione derivative of the formula III,



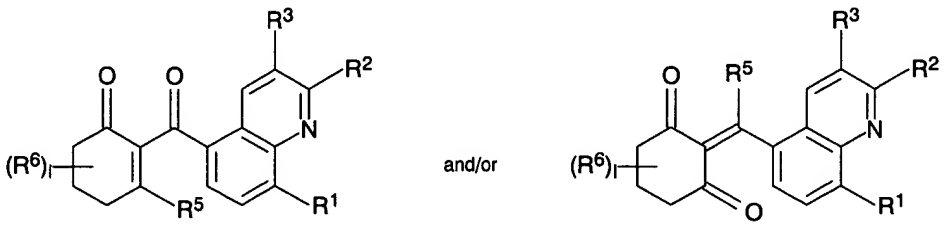
III

where the variables R^1 to R^3, and l are each as defined in claim 1, with a compound of the formula IVα, IVβ, IVγ, IVδ or IVε,

L^1-R^7	L^1-SO_2R^8	L^1-PR^8R^9	L^1-POR^8R^9	L^1-PSR^8R^9
(IVα)	(IVβ)	(IVγ)	(IVδ)	(IVε)

where the variables R^7 to R^9 are each as defined in claim 1 and L^1 is a nucleophilically replaceable leaving group.

8. (*currently amended*) A process for preparing ~~compounds of~~ the <u>compound of</u> formula I as claimed in claim 1 where R^5 = OR^7, SR^7, POR^8R^9, $NR^{10}R^{11}$, <u>or</u> $ONR^{11}R^{12}$, ~~N-linked~~ <u>N-bonded</u> heterocyclyl, which comprises reacting a compound of the formula Iα (≡I where R^5 = halogen, OSO_2R^8),



I where R^5 = halogen or OSO_2R^8

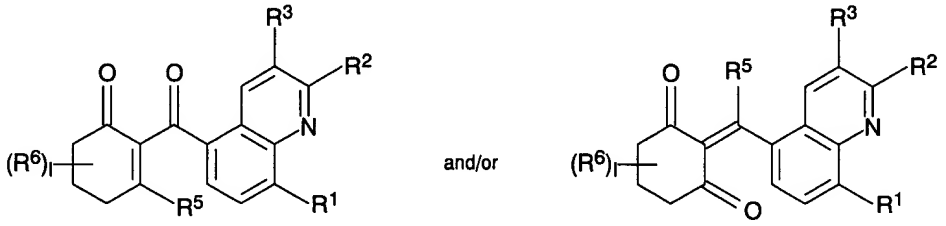
where the variables R^1 to R^3, R^6 and l are each as defined in claim 1, with a compound of the formula Vα, Vβ, Vγ, Vδ, Vε, Vη, ~~Vϑ,~~

HOR^7 (Vα) HSR^7 (Vβ) $HPOR^8R^9$ (Vγ) $HNR^{10}R^{11}$ (Vδ) $HONR^{11}R^{12}$ (Vε)

H(~~N-linked~~ N-bonded heterocyclyl) (Vη)

where the variables R^7 to R^{12} are each as defined in claim 1, if appropriate in the presence of a base.

9. (*currently amended*) A process for preparing ~~compounds of~~ the compound of formula I as claimed in claim 1, where R^5 = SOR^8, SO_2R^8, which comprises reacting a compound of the formula Iβ (≡I where R^5 = SR^8),



I where R^5 = SR^8

where the variables R^1 to R^8 and l are each as defined in claim 1, with an oxidizing agent.

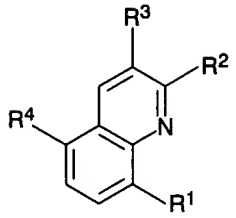
10. (*currently amended*) A composition, comprising a herbicidally effective amount of at least one cyclohexenonequinolinoyl ~~derivative~~ compound of ~~the~~ formula I or an agriculturally useful salt ~~of formula I~~ thereof as claimed in claim 1 and auxiliaries which are customarily used for formulating crop protection agents.

11. (*canceled*)

12. (*currently amended*) A method for controlling undesirable vegetation, which comprises allowing a herbicidally effective amount of at least one cyclohexenonequinolinoyl ~~derivative~~ compound of ~~the~~ formula I or an agriculturally useful salt ~~of formula I~~ thereof as claimed in claim 1 to act on plants, their habitat and/or on seeds.

13. (*canceled*)

14. (*currently amended*) A cyclohexenonequinolinoyl ~~derivative~~ compound of ~~the~~ formula I



I

where:

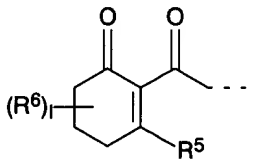
R^1 is hydrogen, nitro, halogen, cyano, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxyiminomethyl, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_1-C_6-haloalkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-haloalkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylsulfonyl, aminosulfonyl, N-(C_1-C_6-alkyl)aminosulfonyl, N,N-di-(C_1-C_6-alkyl)aminosulfonyl, N-(C_1-C_6-alkylsulfonyl)amino, N-(C_1-C_6-haloalkylsulfonyl)amino, N-(C_1-C_6-alkyl)-N-(C_1-C_6-alkylsulfonyl)amino, N-(C_1-C_6-alkyl)-N-(C_1-C_6-haloalkylsulfonyl)amino,

phenoxy, or phenylthio, it being possible for the two last-mentioned radicals to be partially or fully halogenated and/or to carry one ~~to three~~ <u>or two</u> of the following substituents:

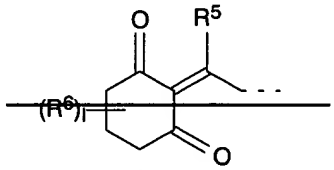
nitro, cyano, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy or C_1-C_4-haloalkoxy;

R^2, R^3 are hydrogen, C_1-C_6-alkyl, C_1-C_6-haloalkyl or halogen;

R^4 is a compound IIa



IIa



~~IIb~~

where

R^5 is halogen, OR^7, SR^7, SOR^8, SO_2R^8, OSO_2R^8, POR^8R^9, OPR^8R^9, $OPOR^8R^9$, $OPSR^8R^9$, $NR^{10}R^{11}$, $ONR^{11}R^{12}$, ~~N-linked~~ <u>or N-bonded</u> heterocyclyl;

<u>wherein the N-bonded heterocycle is selected from the group consisting of: tetrahydropyrrol-1-yl, 2,3-dihydro-1H-pyrrol-1-yl, 2,5-dihydro-1H-pyrrol-1-yl, pyrrol-1-yl, tetrahydropyrazol-1-yl, tetrahydroisoxazol-2-yl, tetrahydrothiazo-2-yl, tetrahydroimidazol-1-yl, tetrahydrooxazol-3-yl, tetrahydrothiazol-3-yl, pyrazol-1-yl, imidazol-1-yl, 1,2,4-triazol-1-yl, tetrazol-1-yl, piperidin-1-yl, 4-oxo-1,4-dihydro-1-pyridyl, hexahydropyrimidin-1-yl, hexahy-</u>

ydropyrazin-1-yl, tetrahydro-1,4-oxazin-4-yl, tetrahydro-1,2oxazin-2-yl, succinimide, maleimide and glutarimide,

and wherein the N-bonded heterocycle is optionally partially or fully halogenated and/or is unsubstituted or substituted by one to three of the following radicals: citro, cyano, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy or C_1-C_4-haloalkoxy;

R^6 is nitro, halogen, cyano, C_1-C_6-alkyl, C_1-C_6-haloalkyl, di-(C_1-C_6-alkoxy)methyl, di-(C_1-C_6-alkylthio)methyl, (C_1-C_6-alkoxy)(C_1-C_6-alkylthio)methyl, hydroxyl, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkoxycarbonyloxy, C_1-C_6-alkylthio, C_1-C_6-haloalkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-haloalkylsulfinyl, C_1-C_6-alkylsulfonyl, C_1-C_6-haloalkylsulfonyl, C_1-C_6-alkylcarbonyl, C_1-C_6-haloalkylcarbonyl, C_1-C_6-alkoxycarbonyl or C_1-C_6-haloalkoxycarbonyl;

or

two radicals R^6, which are linked to the same carbon, together ~~form an~~ represent a chain -O-$(CH_2)_m$-O-, -O-$(CH_2)_m$-S-, -S-$(CH_2)_m$-S-, -O-$(CH_2)_n$- or -S-$(CH_2)_n$-, ~~chain~~ which chain is unsubstituted or substituted by one to three radicals from the following group:

halogen, cyano, C_1-C_4-alkyl, C_1-C_4-haloalkyl or C_1-C_4-alkoxycarbonyl;

or

two radicals R^6, which are linked to the same carbon, together ~~form a~~ represent a chain -$(CH_2)_p$- ~~chain~~ which ~~possibly~~ is optionally interrupted by oxygen or sulfur and/or is unsubstituted or substituted by one to four radicals from the following group:

halogen, cyano, C_1-C_4-alkyl, C_1-C_4-haloalkyl or C_1-C_4-alkoxycarbonyl;

or

two radicals R^6, which are linked to the same carbon, together ~~form~~ represent a methylidene group which is unsubstituted or substituted by one or two radicals from the following group:

halogen, hydroxyl, formyl, cyano, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_1-C_6-haloalkylthio, C_1-C_6-alkylsulfinyl, C_1-C_6-haloalkylsulfinyl, C_1-C_6-alkylsulfonyl or C_1-C_6-haloalkylsulfonyl;

or

two radicals $\underline{R^6}$, which are linked to the same carbon, together with this carbon ~~form~~ represent a carbonyl group;

or

two radicals $\underline{R^6}$, which are linked to different carbons, together ~~form~~ represent a $-(CH_2)_n-$ chain which is unsubstituted or substituted by one to three radicals from the following group:

halogen, C_1-C_6-alkyl, C_1-C_6-alkoxy, hydroxyl or C_1-C_6-alkoxycarbonyl;

R^7 is C_1-C_6,-alkyl, C_3-C_6-alkenyl, C_3-C_6-haloalkenyl, C_3-C_6-alkynyl, C_3-C_6-haloalkynyl, C_3-C_6-cyloalkyl, C_1-C_{20}-alkylcarbonyl, C_2-C_6-alkenylcarbonyl, C_2-C_6-alkynylcarbonyl, C_3-C_6-cyloalkylcarbonyl, C_1-C_6-alkoxycarbonyl, C_3-C_6-alkenyloxycarbonyl, C_3-C_6-alkynyloxycarbonyl, (C_1-C_{20}-alkylthio)carbonyl, C_1-C_6-alkylaminocarbonyl, C_3-C_6-alkenylaminocarbonyl, C_3-C_6-alkynylaminocarbonyl, N,N-di-(C_1-C_6-alkyl)aminocarbonyl, N-(C_3-C_6-alkenyl)-N-(C_1-C_6-alkyl)aminocarbonyl, N-(C_3-C_6-alkynyl)-N-(C_1-C_6-alkyl)aminocarbonyl, N-(C_1-C_6-alkoxy)-N-(C_1-C_6-alkyl)aminocarbonyl, N-(C_3-C_6-alkenyl)-N-(C_1-C_6-alkoxy)aminocarbonyl, N-(C_3-C_6-alkynyl)-N-(C_1-C_6-alkoxy)aminocarbonyl, di-(C_1-C_6-alkyl)-aminothiocarbonyl, C_1-C_6-alkylcarbonyl-C_1-C_6-alkyl, C_1-C_6-alkoxyimino-C_1-C_6-alkyl, N-(C_1-C_6-alkylamino)imino-C_1-C_6-alkyl or N,N-di-(C_1-C_6-alkylamino)imino-C_1-C_6-alkyl, it being possible for the above-mentioned alkyl, cycloalkyl and alkoxy radicals to be partially or fully halogenated and/or to carry one to three of the following groups:

cyano, C_1-C_4-alkoxy, C_1-C_4-alkylthio, di-(C_1-C_4-alkyl)amino, C_1-C_4-alkylcarbonyl, C_1-C_4-alkoxycarbonyl, C_1-C_4-alkoxy-C_1-C_4-alkoxycarbonyl, di-(C_1-C_4-alkyl)amino-C_1-C_4-alkoxycarbonyl, hydroxycarbonyl, C_1-C_4-alkylaminocarbonyl, di-(C_1-C_4-alkyl)aminocarbonyl, aminocarbonyl, C_1-C_4-alkylcarbonyloxy or C_3-C_6-cycloalkyl;

phenyl, phenyl-C_1-C_6-alkyl, phenylcarbonyl-C_1-C_6-alkyl, phenylcarbonyl, phenoxycarbonyl, phenoxythiocarbonyl, phenoxy-C_1-C_6-alkylcarbonyl, phenylaminocarbonyl, N-(C_1-C_6-alkyl)-N-(phenyl)aminocarbonyl, or phenyl-C_2-C_6-alkenylcarbonyl, it being possible for the phenyl and the heterocyclyl radical of the 10 last-mentioned substituents to be partially

or fully halogenated and/or to carry one to three of the following radicals:

nitro, cyano, C_1-C_4-alkyl, C_1-C_4-halogenalkyl, C_1-C_4-alkoxy or C_1-C_4-haloalkoxy;

R^8, R^9 are C_1-C_6-alkyl, C_3-C_6-alkenyl, C_3-C_6-haloalkenyl, C_3-C_6-alkynyl, C_3-C_6-haloalkynyl, C_3-C_6-cycloalkyl, hydroxyl, C_1-C_6-alkoxy, amino, C_1-C_6-alkylamino, C_1-C_6-haloalkylamino, di-(C_1-C_6-alkyl)amino or di-(C_1-C_6-haloalkyl)amino, it being possible for the abovementioned alkyl, cycloalkyl and alkoxy radicals to be partially or fully halogenated and/or to carry one to three of the following groups:

cyano, C_1-C_4-alkoxy, C_1-C_4-alkylthio, di-(C_1-C_4-alkyl)amino, C_1-C_4-alkylcarbonyl, C_1-C_4-alkoxycarbonyl, C_1-C_4-alkoxy-C_1-C_4-alkoxycarbonyl, di-(C_1-C_4-alkyl)amino-C_1-C_4-alkoxycarbonyl, hydroxycarbonyl, C_1-C_4-alkylaminocarbonyl, di-(C_1-C_4-alkyl)aminocarbonyl, aminocarbonyl, C_1-C_4-alkylcarbonyloxy or C_3-C_6-cycloalkyl;

phenyl, phenyl-C_1-C_6-alkyl, or phenoxy, it being possible for the phenyl and the heterocyclyl radical of the last-mentioned substituents to be partially or fully halogenated and/or to carry one to three of the following radicals:

nitro, cyano, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy or C_1-C_4-haloalkoxy;

R^{10} is C_1-C_6-alkyl, C_3-C_6-alkenyl, C_3-C_6-haloalkenyl, C_3-C_6-alkynyl, C_3-C_6-haloalkynyl, C_3-C_6-cycloalkyl, hydroxyl, C_1-C_6-alkoxy, C_3-C_6-alkenyloxy, C_3-C_6-alkynyloxy, amino, C_1-C_6-alkylamino, di-(C_1-C_6-alkyl)amino or C_1-C_6-alkylcarbonylamino, it being possible for the abovementioned alkyl, cycloalkyl and alkoxy radicals to be partially or fully halogenated and/or to carry one to three radicals from the following group:

cyano, C_1-C_4-alkoxy, C_1-C_4-alkylthio, di-(C_1-C_4-alkyl)amino, C_1-C_4-alkylcarbonyl, C_1-C_4-alkoxycarbonyl, C_1-C_4-alkoxy-C_1-C_4-alkoxycarbonyl, di-(C_1-C_4-alkyl)amino-C_1-C_4-alkoxycarbonyl, hydroxycarbonyl, C_1-C_4-alkylaminocarbonyl, di-(C_1-C_4-alkyl)aminocarbonyl, aminocarbonyl, C_1-C_4-alkylcarbonyloxy or C_3-C_6-cycloalkyl;

phenyl, or phenyl-C_1-C_6-alkyl, it being possible for the phenyl radical of the two last-mentioned substituents to be par-

tially or fully halogenated and/or to carry one to three of the following radicals:

nitro, cyano, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy or C_1-C_4-haloalkoxy;

R^{11}, R^{12} are C_1-C_6-alkyl, C_3-C_6-alkenyl, C_3-C_6-alkynyl or C_1-C_6-alkylcarbonyl;

l is 0 to 6;

m is 2 to 4;

n is 1 to 5;

p is 2 to 5;

~~and their~~ or an agriculturally useful ~~salts~~ salt thereof.

15. (*currently amended*) A cyclohexenonequinolinoyl ~~derivative~~ compound of ~~the~~ formula I as claimed in claim 14, where

R^1 is halogen, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_6-alkoxy, C_1-C_6-alkylthio, or phenylthio, it being possible for the last-mentioned radical to be partially or fully halogenated and/or to carry one to two of the substituents mentioned below:

nitro, cyano, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy or C_1-C_4-haloalkoxy;

R^5 is halogen, OR^7, SR^7, SOR^8, SO_2R^8, OSO_2R^8, OPR^8R^9, $OPOR^8R^9$ $OPSR^8R^9$, $NR^{10}R^{11}$ or N-bonded heterocyclyl.

16. (*currently amended*) A cyclohexenonequinolinoyl ~~derivative~~ compound of ~~the~~ formula I as claimed in claim 14, where

R^5 is halogen, OR^7, $NR^{10}R^{11}$ or N-bonded heterocyclyl.

17. (*currently amended*) A cyclohexenonequinolinoyl ~~derivative~~ compound of ~~the~~ formula I as claimed in claim 14, where

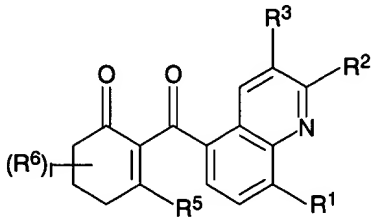
R^7 is C_1-C_6-alkyl, C_1-C_{20}-alkylcarbonyl, C_1-C_6-alkoxycarbonyl, (C_1-C_{20}-alkylthio)carbonyl, N,N-di-(C_1-C_6-alkyl)aminocarbonyl, phenyl, phenylcarbonyl or phenoxy-C_1-C_6-alkylcarbonyl, it being possible for the phenyl radical of the three last-mentioned substituents to be partially or fully halogenated and/or to carry one to three of the following radicals:

nitro, cyano, C_1-C_4-alkyl, C_1-C_4-haloalkyl, C_1-C_4-alkoxy or C_1-C_4-haloalkoxy;

R^{10} is C_1-C_6-alkyl or C_1-C_6-alkoxy;

R^{11} is C_1-C_6-alkyl.

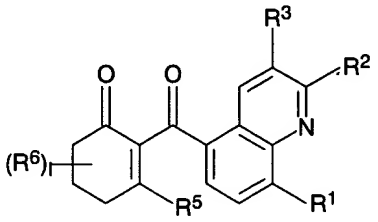
18. (*currently amended*) A process for preparing ~~compounds of~~ the <u>compound of</u> formula I as claimed in claim 14 where R^5 = halogen, which comprises reacting a cyclohexanedione ~~derivative~~ of ~~the~~ formula III,



III

where the variables R^1 to R^3, and l are each as defined in claim 14, with a halogenating agent.

19. (*currently amended*) A process for preparing ~~compounds of~~ the <u>compound of</u> formula I as claimed in claim 14 where $R^5 = OR^7$, OSO_2R^8, OPR^8R^9, $OPOR^8R^9$ or $OPSR^8R^9$, which comprises reacting a cyclohexanedione ~~derivative~~ of ~~the~~ formula III,



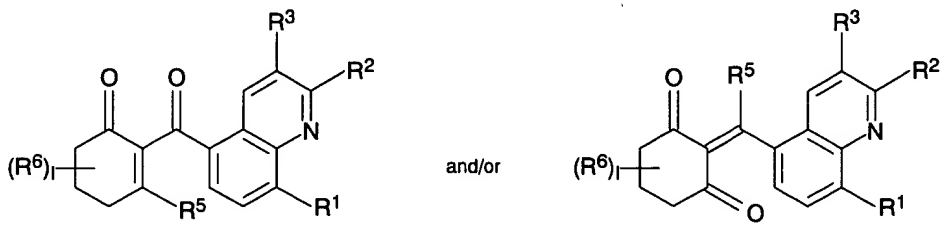
III

where the variables R^1 to R^3, and l are each as defined in claim 14, with a compound of the formula IVα, IVβ, IVγ, IVδ or IVε,

L^1-R^7	L^1-SO_2R^8	L^1-PR^8R^9	L^1-POR^8R^9	L^1-PSR^8R^9
(IVα)	(IVβ)	(IVγ)	(IVδ)	(IVε)

where the variables R^7 to R^9 are each as defined in claim 14 and L^1 is a nucleophilically replaceable leaving group.

20. (*currently amended*) A process for preparing ~~compounds of~~ the <u>compound of</u> formula I as claimed in claim 14 where $R^5 = OR^7$, SR^7, POR^8R^9, $NR^{10}R^{11}$, $ONR^{11}R^{12}$, or ~~N-linked~~ <u>N-bonded</u> heterocyclyl which comprises reacting a compound of the formula Iα (≡ I where R^5 = halogen, OSO_2R^8),



I where R^5= halogen or OSO_2R^8

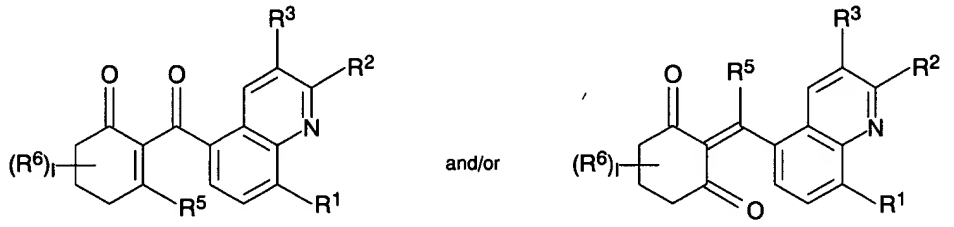
where the variables R^1 to R^3, and l are each as defined in claim 14, with a compound of the formula Vα, Vβ, Vγ, Vδ, Vε, Vη,

HOR^7 (Vα) HSR^7 (Vβ) $HPOR^8R^9$ (Vγ) $HNR^{10}R^{11}$ (Vδ) $HONR^{11}R^{12}$ (Vε)

H(~~N-linked~~ N-bonded heterocyclyl) (Vη)

where the variables R^7 to R^{12} are each as defined in claim 14, if appropriate in the presence of a base.

21. (*currently amended*) A process for preparing ~~compounds of~~ the compound of formula I as claimed in claim 14 where R^5 = SOR^8, SO_2R^8, which comprises reacting a compound of the formula Iβ (≡I where R^5 = SR^8),



I where R^5= SR^8

where the variables R^1 to R^5, R^7, R^8 and l are each as defined in claim 14, with an oxidizing agent.

22. (*currently amended*) A composition, comprising a herbicidally effective amount of at least one cyclohexenonequinolinoyl ~~derivative of the~~ compound of formula I or an agriculturally useful salt ~~of formula I~~ thereof as claimed in claim 14 and auxiliaries which are customarily used for formulating crop protection agents.

23. (*currently amended*) A process for preparing compositions as claimed in claim 22, which comprises mixing a herbicidally effective amount of at least one cyclohexenonequinolinoyl ~~derivative of the~~ compound of formula I or an agriculturally useful salt ~~of formula I~~ thereof and auxiliaries which are customarily used for formulating crop protection agents.

24. (*currently amended*) A method for controlling undesirable vegetation, which comprises allowing a herbicidally effective amount of at least one cyclohexenonequinolinoyl ~~derivative of the~~ compound of formula I or an agriculturally useful salt ~~of formula I~~ thereof as claimed in claim 14 to act on plants, their habitat and/or on seeds.

25. (*canceled*)

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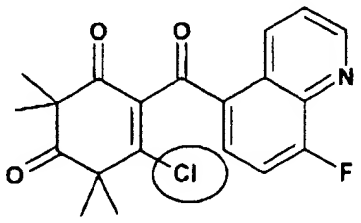
Test Report

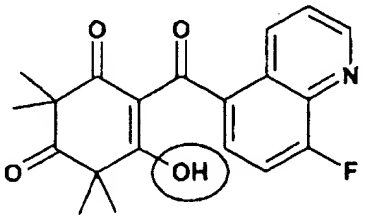
The experiments were carried out as described in US Application No. 09/763,704 on page. 89. The plants used in the green house experiments belong to following species:

Scientific Name	Common Name
Abutilon theoprasti	Velvet leaf
Alopecurus myosuroides	Foxtail
Amaranthus retroflexus	Pigweed
Avena fatua	Wild oat
Brachiaria plantaginea	Alexander grass
Chenopodium album	Lambsquater
Echinochloa cruss-galli	Barnyard grass
Galium aparine	Catchweed
Ipomoea ssp.	Morning glory
Panicum miliaceum	Millet common
Polygonum persicaria	Ladysthumb
Setaria faberi	Foxtail giant
Sinapis alba	White mustard
Triticum aestivum	Winter wheat
Zea mays	Corn

Table 1: Herbicidal action of compound 2.23 of the present invention and comparison compound 12.03 of US 6,479,436 at an application rate of 31.2 and 15.6 g/ha (post emergence; green house)



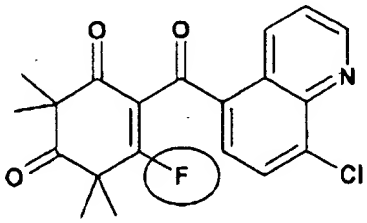
Compound 2.23



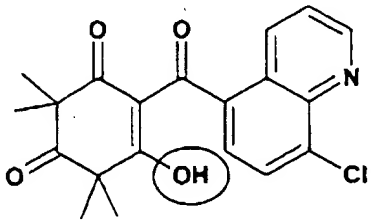
Compound 12.03 (of US 6,479,436)

Application rate [g/ha]	31.2	15.6	31.2	15.6
		Damage [%]		
Unwanted Plants				
Echinochloa cruss-galli	85	85	85	70
Galium aparine	85	80	80	75
Polygonum persicaria	98	98	70	60
Setaria faberi	80	80	60	40

Table 2: Herbicidal action of compound 2.57 of the present invention and comparison compound 12.05 of US 6,479,436 at an application rate of 62.5 and 31.2 g/ha (post emergence; green house)



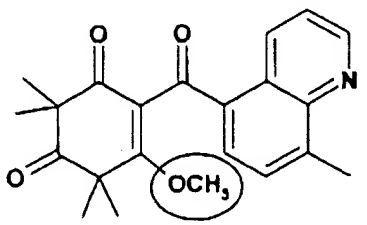
Compound 2.57



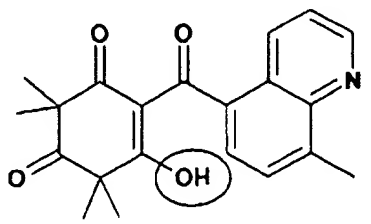
Compound 12.05 (of US 6,479,436)

Application rate [g/ha]	62.5	31.2	62.5	31.2
		Damage [%]		
Crop plant				
Zea mays	0	0	50	40
Unwanted plants				
Abutilon theoprasti	100	95	80	80
Brachiaria plantaginea	95	95	85	80
Echinochloa cruss-galli	100	95	80	75
Galium aparine	98	98	75	60
Ipomoea ssp.	95	90	80	75

Table 3: Herbicidal action of compound 2.18 of the present invention and comparison compound 12.01 of US 6,479,436 at an application rate of 62.5 and 31.2 g/ha (post emergence; green house)



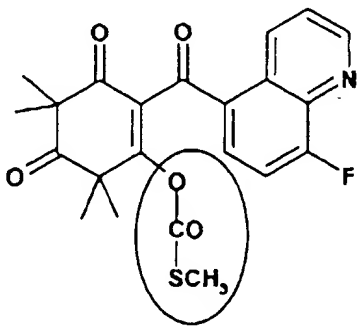
Compound 2.18



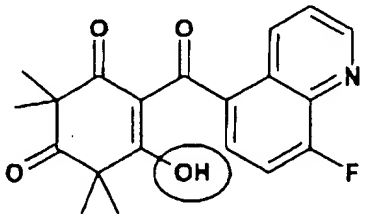
Compound 12.01 (of US 6,479,436)

Application rate [g/ha]	62.5	31.2	62.5	31.2
		Damage [%]		
Crop plant				
Triticum aestivum	0	0	20	15
Unwanted plants				
Chenopodium album	90	90	80	75
Galium aparine	95	90	85	75
Sinapis alba	95	85	80	75

Table 4: Herbicidal action of compound 2.17 of the present invention and comparison compound 12.03 of US 6,479,436 at an application rate of 125 and 62.5 g/ha (post emergence; green house)



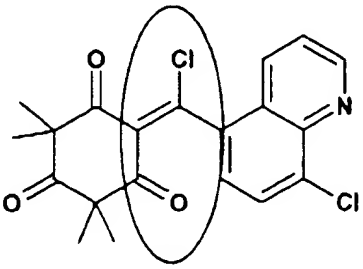
Compound 2.17



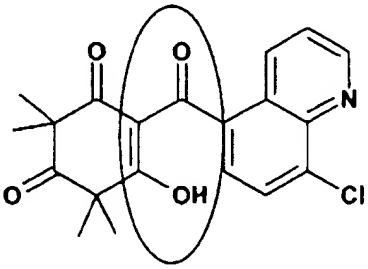
Compound 12.03 (of US 6,479,436)

Application rate [g/ha]	125	62.5	125	62.5
		Damage [%]		
Unwanted plants				
Amaranthus retroflexus	98	85	90	75
Echinochloa cruss-galli	100	90	75	65
Panicum miliaceum	95	95	95	80

Table 5: Herbicidal action of compound 3.1 of the present invention and comparison compound 12.05 of US 6,479,436 at an application rate of 62.5 and 31.2 g/ha (post emergence; green house)



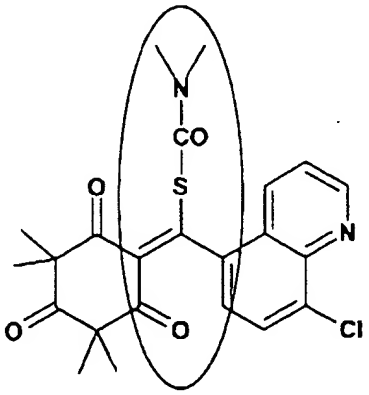
Compound 3.1



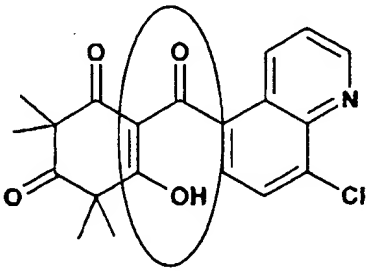
Compound 12.05 (of US 6,479,436)

Application rate [g/ha]	62.5	31.2	62.5	31.2
		Damage [%]		
Unwanted plants				
Chenopodium album	95	95	95	85
Galium aparine	98	95	75	60
Polygonum persicaria	95	90	90	85
Setaria faberi	98	95	90	85

Table 6: Herbicidal action of compound 3.4 of the present invention and comparison compound 12.05 of US 6,479,436 at an application rate of 500 and 250 g/ha (post emergence; green house)



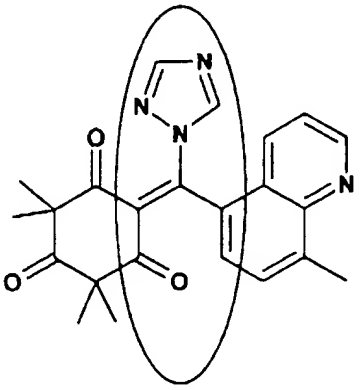
Compound 3.4



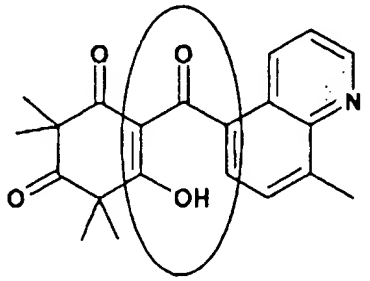
Compound 12.05 (of US 6,479,436)

Application rate[g/ha]	500	250	500	250
		Damage [%]		
Unwanted plants				
Alopecurus myosuroides	98	98	90	90
Amaranthus retroflexus	100	100	90	80
Avena fatua	95	90	95	80

Table 7: Herbicidal action of compound 3.2 of the present invention and comparison compound 12.01 of US 6,479,436 at an application rate of 125 and 62.5 g/ha (post emergence; green house)



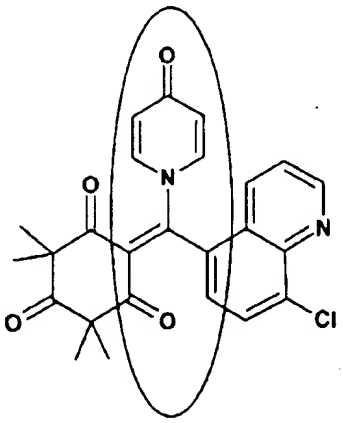
Compound 3.2



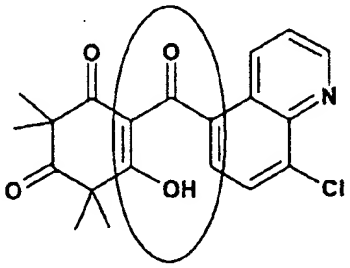
Compound 12.01 (of US 6,479,436)

Application rate[g/ha]	125	62.5	125	62.5
		Damage [%]		
Unwanted plants				
Chenopodium album	98	95	95	80
Echinochloa cruss-galli	95	95	95	90
Galium aparine	95	95	90	85
Ipomoea ssp.	95	90	90	80
Sinapis alba	95	85	95	75

Table 8: Herbicidal action of compound 3.5 of the present invention and comparison compound 12.05 of US 6,479,436 at an application rate of 250 and 125 g/ha (post emergence; green house)



Compound 3.2



Compound 12.05 (of US 6,479,436)

Application rate [g/ha]	250	125	250	125
		Damage [%]		
Unwanted plants				
Abutilon theoprasti	98	98	85	85
Alopecurus myosuroides	100	100	85	85
Amaranthus retroflexus	95	85	65	50
Echinochloa cruss-galli	100	100	90	85
Galium aparine	100	100	75	75

The comparison of the herbicidal action of the compounds of the present invention with the closest compounds known of US 6,479,436 shows that the known compounds control unwanted plants but the data also show that the replacement of the hydroxyl radical by radicals like fluoro, chloro, methoxy, dimethylaminocarbonylthio increases the herbicidal activity. This effect is obvious especially at lower application rates. Furthermore the comparisons of Tables 2 and 3 demonstrate that the compounds of the present invent show are tolerated by crop plants.